



# SISC Risk Management Bulletin

## Maintaining Safe Playgrounds

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California's playground safety regulations became effective on January 1, 2000. The regulations were developed by the Department of Health Services (DHS) in consultation with the Office of the State Architect, the California Parks and Recreation Society, the League of California Cities, and the California Department of Education.

The regulations help school district administrators determine their responsibilities in inspecting, modernizing, maintaining, and developing play areas on school property. In the time since the implementation of the regulations, many districts have taken aggressive actions to upgrade their playground equipment and facilities thereby achieving safer play environments for children.

However, maintaining safe playgrounds is an ongoing effort. A long-term action plan to upgrade playground sites should be reflected in the district's maintenance/repair budget. The plan should represent a multi-year process that would address all playground safety needs now and in the future.

The following outline is provided to illustrate some of the major components that should be contemplated and included in a playground safety program:

- Policy statement
- Site inspections
- Hazard correction
- Staff training
- Playground signage
- Accident investigation

Playground documentation and records that should be maintained as part of the program include the following:

- Copies of current public playground safety guidelines or standards
- Copies of all staff training records
- Individual playground site history by location
- Inspection forms

One of the most important steps in the overall effort to maintain safe playgrounds is to identify and repair existing hazards. Developing or improving a regular playground inspection and maintenance program is an essential element in this effort. A major playground equipment manufacturer study alleged that 28% of playground accidents were caused by inadequate maintenance practices by playground operators. Inadequate maintenance inspections and corrective procedures are a common cause of playground accidents. The resulting lack of inspections or poor documentation may be added fuel for legal action against a school district once an injury occurs.

The frequency of documented playground inspections should be based on factors such as playground size, age of the equipment, playground usage, frequency of repairs, vandalism, and frequency of reported incidents or accidents. District staff should evaluate these factors and determine how often the playground should be inspected.

Districts may wish to use two separate types of inspections—high frequency/routine and low frequency/periodic. High frequency/routine inspections can identify surfacing problems, vandalism, and debris (such as glass) that can lead to an accident. Personnel who already perform tasks such as grounds maintenance or playground supervision can easily perform these inspections.

Low frequency/periodic inspections are made less often but are more comprehensive than high frequency/routine inspections. They require a greater amount of time to perform and require more experienced and knowledgeable personnel. Periodic inspections evaluate equipment structural integrity. These inspections can be done on a seasonal basis depending on individual playground factors affecting each location.

The National Playground Safety Institute (NSPI) has identified twelve of the leading causes of injury on playgrounds. Familiarizing yourself with the “Dirty Dozen Checklist” will help you and your design professional avoid these pitfalls for new playground equipment. They can also be used as the basis for inspection protocols.

Improper Protective Surfacing: Improper surfacing material under playground equipment is the leading cause of playground related injuries. Over 70% of all accidents on playgrounds are from children falling. There are many surfaces that offer protection from falls. Acceptable surfaces are engineered wood fiber/mulch, sand, and pea gravel. These surfaces must be maintained at a depth of 12 inches, be free of standing water and debris, and not be allowed to become compacted. Some synthetic materials may also be appropriate in certain situations.

Drainage is an area often overlooked that can have a dramatic effect on the long-term structural integrity of your playground support

members as well as the effectiveness and life expectancy of the surfacing material.

Excessive moisture from rain or sprinklers can allow moisture to accumulate around structure footings making them unstable. Excessive moisture or standing water tends to compact loose surfacing materials making them less effective. The drainage below playground equipment should be evaluated for its ability to move water away from the use zone of the equipment. Always follow the manufacturer’s instructions regarding drainage when using engineered wood fiber/mulch.

Inadequate Use Zone: Use zones are under and around the playground equipment where a child might fall. A use zone should be covered with protective surfacing material and extend a minimum of 6 feet in all directions from the edge of stationary play equipment such as climbers and chin up bars.

The use zone at the bottom or exit area of a slide should extend a minimum of 6 feet from the end of the slide.

Swings require a much greater area for the use zone. The use zone should extend two times the height of the pivot or swing hanger in front of and behind the swing’s seats. The use zone should also extend 6 feet to the side of the support structure.

Protrusion and Entanglement Hazards: Protrusion hazards are components or pieces of hardware that might be capable of impaling or cutting a child if a child should fall against the hazard. Some protrusions are also capable of catching strings or items of clothing that might be worn around the child’s neck. This type of entanglement is especially hazardous because it might result in strangulation.

Examples of protrusion and entanglement hazards include bolt ends that extend more than two threads beyond the face of the nut, hardware configurations that form a hook or

leave a gap between components and open “S” type hooks. Rungs or handholds that protrude outward from a support structure may be capable of penetrating the eye socket. Special attention should be paid to the area at the top of slides and sliding devices.

Entrapment in Openings: Openings on playground equipment should be checked for head entrapment hazards. Children often enter openings feet first and attempt to slide through the opening. If the opening is not large enough, it may allow the body to pass through the opening and entrap the head. There should be no openings on playground equipment that measure between 3 ½ inches and 9 inches.

Openings where the ground forms the lower boundary are not considered to be hazardous. Pay special attention to openings at the top of a slide, openings between platforms, and openings on climbers where the distance between rungs might be less than 9 inches.

Insufficient Equipment Spacing: Improper spacing between pieces of play equipment can cause overcrowding of a play area that may create several hazards. Use zones for equipment that is higher than 30 inches above the ground cannot overlap. Therefore, there should be a minimum of 12 feet in between two play structures. Swings and other pieces of moving equipment should be located in an area away from other structures.

Trip Hazards: Trip hazards are created by play structure components or items on the playground. Exposed concrete footings, abrupt changes in surface elevation, containment borders, tree roots, tree stumps, and rocks are all common trip hazards that are often found in play environments.

Lack of Supervision: The supervision of a playground directly relates to the overall safety of the playground. A play area should be designed so that it is easy to observe the children at play. Young children are constantly

challenging their own abilities, very often not being able to recognize potential hazards. It is estimated that over 40% of all playground injuries are directly related to lack of appropriate supervision.

Age-Inappropriate Activities: In an effort to provide a challenging and safe play environment for all ages it is important to make sure that the equipment in the playground setting is appropriate for the age of the intended user. Areas for preschool age children should be separate from areas intended for school age children.

Lack of Maintenance: In order for playgrounds to remain in “safe” condition a program of systematic, preventive maintenance must be present. There should be no missing, broken or worn-out components. All hardware should be secure. The wood, metal, or plastic should not show signs of fatigue or deterioration. All parts should be stable with no apparent signs of loosening.

Additional consideration should be given to wood structures. Wood play structures, especially those with wood supports that extend below grade, tend to weather, split, splinter, and rot faster than other materials. A variety of environmental factors will affect this decomposition process necessitating more frequent inspections.

Pinch, Crush, Shearing, and Sharp Edge Hazards: Components in the play environment should be inspected to make sure that there are no sharp edges or points that could cut skin. Moving components such as suspension bridges, track rides, merry-go-rounds, seesaws, and some swings should be checked to make sure that there are no moving parts or mechanisms that might crush or pinch a child’s finger.

Platforms With No Guardrails: Elevated surfaces such as platforms, ramps, and bridgeways should have guardrails that would prevent accidental falls. Equipment intended for school-age children should have guardrails on elevated surfaces higher than 30 inches.

Equipment Not Recommended for Public Playgrounds: Accidents associated with the following types of equipment have resulted in the Consumer Product Safety Commission recommending that they not be used on public playgrounds:

- Heavy swings such as animal figure swings and multiple occupancy/glider type swings
- Free swinging ropes that may fray or form a loop
- Swinging exercise rings and trapeze bars

Other equipment that is not acceptable for school district use is non-commercial structures. Often, in an effort to save money, administrators purchase equipment that was not manufactured for commercial use and does not meet the current California regulations. The most common type of structure in this category is the plastic component climber/slide structure.

District administrators should be very careful with the selection of new playground equipment. Under the new regulations, California now has requirements that are different from other states. Just because a manufacturer or sales representative states that equipment meets the CPSC guidelines does not mean the equipment meets California standards. For instance, composite structures with climbing wall components are known to have compliance issues under California standards. If there is any doubt, contact your SISC Safety representative.

It is recommended that new playground equipment be assembled and installed under the direct supervision of a contractor authorized by

the manufacturer. Installation by district personnel or parent volunteer groups creates a legal liability hazard to the district. Such installations, particularly those by unsupervised parent groups, can bring allegations of negligence because of potential improper installation.

The district is responsible for contracting with a California Playground Safety Inspector to supervise the installation and/or to inspect and certify the installation and equipment meets the regulatory requirements.

There are also new regulations from the Architectural and Transportation Barriers Compliance Board that affect playgrounds. The American With Disabilities Act (ADA) Accessibility Guidelines for Buildings and Facilities became effective October 3, 2002. These regulations will ensure that newly constructed and altered play areas meet the requirements of the ADA and are readily accessible and usable by individuals with disabilities. These regulations are technical in nature and may require the expertise of a licensed architect.

For additional information, clarification, inspection forms, or assistance, contact your SISC Safety and Loss Control representative.

An inspection form may be downloaded from the SISC Safety and Loss Control Web site <http://sisc.kern.org/safetyandlosscontrol/> click on the "Forms" option).

Reference: Health and Safety Code, Sections 115725-115750.